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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,343	03/08/2001	Hiroaki Yukawa	SON-2045	4979
23353	7590	12/09/2003	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			PATEL, GAUTAM	
			ART UNIT	PAPER NUMBER
			2655	

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,343

Applicant(s)

YUKAWA, HIROAKI

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 3-8 and 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9,10 and 17-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

#7

Response to Amendment

1. This is in response to amendment filed on 10-1-03 (Paper # 6).
2. Claims 1-29 remain for examination. Claims 3-8 and 11-16 are withdrawn from further consideration in last action. Action on claims 1-2, 9-10 and 17-29 follows.

Restriction/Election

3. Claims 3-8 and 11-16 were withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species. **The Applicants are urged to cancel these claims.**

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 9-10 and 17-29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimano et al., US. patent 6,400,664 (hereafter Shimano) in view of Sugawara et al., US. patent 6,055,122 (hereafter Sugawara).

As to claim 1, Shimano, discloses the invention as claimed [see Figs. 1-23, especially 20-22] including a first light source, a second light source, an objective lens, a photodetector and a diffraction element, comprising:

a first light source [fig. 20, unit 2001] for emitting a first light beam having a first wavelength [650 nm];

a second light source [fig. 20, unit 2002] for emitting a second light beam having a second wavelength [780 nm] different from the first wavelength;

an objective lens [fig. 20, unit 2008] for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector [fig. 20, unit 2010] for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element [fig. 20, unit G] arranged in the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium; at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector [col. 19, line 56 to col. 20, line 54].

Shimano discloses all of the above elements, including diffraction grating element. Shimano does not specifically disclose that the diffraction element has a first angle and second angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source and first and second angles diffracts respective light beams.

However, it is well known in the art that two beams with two different wavelengths inherently needs to be diffracted at different angle, since both of them are

Art Unit: 2655

projecting beams on the same surface and since two light sources are positioned at different places offset needs to be adjusted to focus on the same spot. Also Sugawara clearly discloses:

The diffraction elements having a first diffraction angle and a second diffraction angle, wherein a difference between a the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source [col. 9, lines 1-33 and col. 11, lines 1-54].

Both Shimano and Sugawara are interested in improving the diffraction elements in an optical disk device. Both Shimano and Sugawara discloses multiple light sources and diffraction devices.

One of ordinary skill in the art at the time of invention would have realized that it would be advantageous to provide a compact design by not using extra mirrors and lenses, thus saving cost and space in the design. Therefore, it would have been obvious to have used a diffraction device with dual angle in the system of Shimano as taught by Sugawara because one would be motivated to reduce cost and save space in the system of Shimano and more compact design that does not require extra mirrors and lenses [col. 11, lines 50-54; Sugawara].

5. As to claim 2, it is rejected for same reasons as set forth in the rejection of claim 1, *supra*.

6. As to claim 9, it is rejected for similar reasons as set forth in the rejection of claim 1, *supra*. As to added limitations of:

Rotary operating mechanism [motor] for driving one or more than one optical disc operating so many pieces of optical recording medium as to rotate [motors for driving discs are inherently present in these kind of recording devices; and
An optical pickup device [fig. 20] arranged opposite to the signal recording surfaces of one or more than one optical discs driven to rotate by said rotary

operating mechanism [motors are inherently placed on the opposite side of the optical head, so as not to interfere with recording and reading.

7. As to claim 10, it is rejected for same reasons as set forth in the rejection of claim 9, *supra*.
8. As to claims 17, 20, 23 and 26 Shimano discloses:
the diffraction element generates a pair of sub-beams from the first reflected light beam and the second reflected light beam, where applicable [col. 20, lines 41-54].
9. As to claims 18, 21, 24 and 27 Shimano discloses:
the diffraction element includes a diffraction grating pattern on one of the opposite side surfaces of a plate [this inherently done because of two wavelengths] [col. 20, lines 18-54].
10. As to claims 19, 22, 25 and 28 Shimano discloses:
the diffraction grating pattern is a blazed grating design [curvilinear] [col. 20, lines 18-54].
11. As to claim 29, it is rejected for same reasons as set forth in the rejection of claim 9, *supra*.

Other prior art cited

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Fukui et al. (US. Patent 5,694,218) "Optical encoder ...".
 - b. Lembo (US. Patent 5,583,516) "Wavelength-selectable optical signal processor".
 - c. Gupta (US. Patent 5,258,871) "Dual diffraction grating beam splitter."
13. Applicant's arguments with respect to claims 1-2, 9-10 and 17-29 have been considered but are moot in view of the new grounds of rejection.
14. Applicant's amendment necessitated the new grounds of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

Art Unit: 2655

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

A handwritten signature in cursive script, reading "Gautam R. Patel", followed by a horizontal line.

Gautam R. Patel
Patent Examiner
Group Art Unit 2655

December 5, 2003